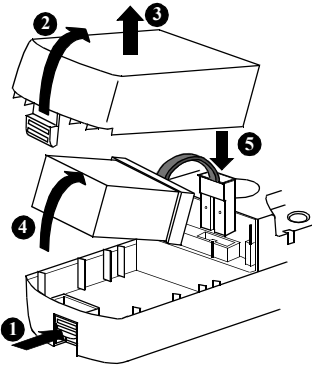


## Installation

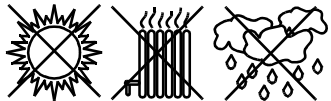
### 1 Connect Battery

The Back-UPS is shipped with the internal battery disconnected. Remove the battery cover and connect the battery, as shown below. Refer to Replacing the Battery for additional information.



### 2 Placement

Avoid placing the Back-UPS in direct sunlight, excessive heat, excessive humidity or in contact with fluids of any type. For convenience, the Back-UPS can be mounted on a wall (see Wall Mount of UPS on the back page).

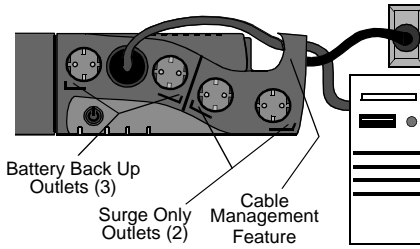


### 3 Connect Equipment to the Back-UPS

**Battery Back Up Outlets (qty. of 3).** These outlets provide battery back-up, surge protection, and Electro-magnetic Interference (EMI) filtering. In case of power outage, battery power is automatically provided to these outlets. Power (facility or battery) is not supplied to these outlets when the Back-UPS is switched **Off**. Connect a computer, monitor, external disk or CD-ROM drive to these outlets.

**Surge Only Outlets (qty. of 2).** These outlets are always **On** (when facility power is available) and are not controlled by the **On/Off** switch. These outlets do not provide power during a power outage. Connect a printer, fax machine or scanner to these outlets.

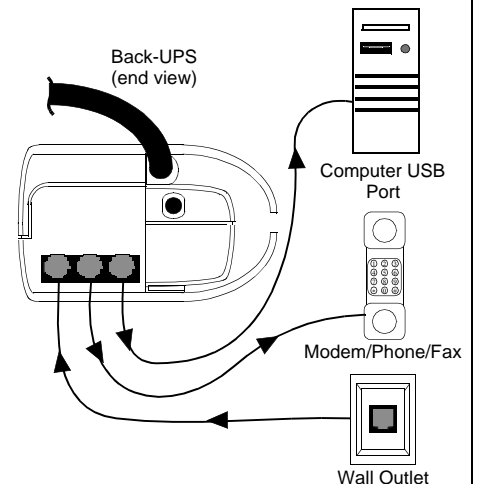
**Cable Management Feature.** For convenience, the Back-UPS provides a method for integral cable management (see below).



### 4 Connect the Phone Line to Surge Protection

The telephone ports provide lightning surge protection for any device connected to the telephone line (computer, modem, fax or telephone). The telephone ports are compatible with Home Phone Networking Alliance (HPNA) and Digital Subscriber Line (DSL) standards, as well as all modem data rates. Connect as shown.

The optional USB Data Port connection is described in step 5.

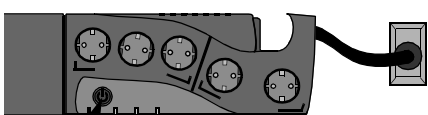


### 5 Switch on the Back-UPS

**Note:** Allow the Back-UPS to charge for a full eight hours prior to use.

**Caution:** The plug on the supply cord is the disconnect device for the product. The socket-outlet that you plug into shall be located near the equipment and shall be easily accessible. The socket outlet must be a grounding type.

Press the Power On/Off push-button on the Back-UPS.



Power On/Off Push-button

Observe that the following events occur after pressing and releasing the push-button:

- The green **On-Line** indicator flashes.
- The yellow **On Battery** indicator lights while the **Self-Test** is being performed.
- When **Self-Test** has successfully completed, only the green **On Line** indicator will be lit.
- If the internal battery is not connected, (see step 1) the green **On Line** indicator and red **Replace Battery** indicator will light. The Back-UPS will also emit a series of short beeps for one minute.

### 6 Connect USB Cable and Install Software (optional)

**Note:** The Back-UPS software CD-ROM provides data reporting and unattended shutdown of the computer connected to the device. The User's Guide contains additional information about the Back-UPS software. The User's Guide is contained in the main folder contained in the CD-ROM.

#### Attention: USB Hubs

The Back-UPS should be plugged into the USB port of the computer, not into a USB hub.

The computer must be powered **On** before connecting the USB cable. Connect the USB cable end (USB symbol facing down) to the USB data port located on the side of the Back-UPS. Connect the other end of the USB cable to the USB port on the rear panel of the computer.

#### Windows 98® and Windows Me® Users

The APC Power Management Extensions software has been designed specifically to work with Windows 98 build number 4.10.1998, Windows 98 SE (Second Edition) 4.10.2222A, and Windows Me (Millennium Edition).

To ascertain the build number, go to the Control Panel, open the System dialog and view the System information under the General tab of the dialog. To install the software, perform the following steps:

1. Please skip to step 4 if running Windows Me. For Windows 98, after connecting the USB cable, the "Add New Hardware Wizard" dialog box is displayed. Insert a Windows 98 operating system CD into the computer CD-ROM drive before proceeding.
2. Follow the installation instructions on the computer screen.

*During installation, Windows will need to search for new drivers. When prompted, make sure the CD-ROM drive box is checked.*

3. After installation of the drivers is complete, a "Windows 98 CD-ROM" dialog box may appear. If this happens, just close the box.
4. Insert the APC Installation CD-ROM into the computer's drive. The software user documentation is a file on the main folder of the CD. The filename is *Users Guide.pdf*.
5. Follow the installation instructions on the computer screen.

*If the software does not automatically install, the Windows autorun feature may have been disabled. In this case: Choose "Start" in the taskbar and then the "Run" option. Type the following: <CD-ROM drive letter>:\setup.exe. Click "OK".*

6. After the installation is complete, the APC plug icon will appear in the taskbar (near the clock). To view the Power Management user interface, double-click on the APC plug taskbar icon or, alternatively, choose: *Start > Settings > Control Panel > Power Management.*

**Note:** Windows 98 and Windows Me categorize a UPS as an HID (Human Interface Device). The Back-UPS is listed in: *Control Panel > System > Device Manager > HID category > HID Compliant Device.*

#### Windows 2000® Users

The CD-ROM included with this package contains a "wizard" that optimizes a computer system's power settings for operation with the Back-UPS. It does this by changing various settings in Power Options Properties in the Control Panel. APC strongly advises that the computer system be reconfigured by running this wizard.

1. Insert the APC Power Management CD-ROM into the computer's drive.
2. Choose "Start" and then the "Run" option. Type: *<CD-ROM drive letter>:\setup.exe.* Click "OK" and follow the instructions.

#### Mac OS 9 (9.0.4 or higher) Users

APC Shutdown Manager software has been designed specifically to work with Mac OS 9 (9.0.4 or higher, except OS X). There are builds of the Mac OS prior to Mac OS 9.0.4 with power drivers that have known problems. Ensure that the most up to date version of Mac OS 9 (9.0.4 or higher) is installed on the system.

Insert the APC Installation CD-ROM with the APC Shutdown Manager software into the CD-ROM drive. An icon called "APC Shutdown Manager v1.0" will appear on the computer desktop. Open the folder and double-click the "ReadMe" file. Ensure that the computer's hardware matches the requirements stated in the ReadMe file. Double-click on "APC Shutdown Manager v1.0" to begin the installation of the software. At the first dialog, click on "Continue". Read the displayed license agreement and click "Accept" to agree to the terms. Click on "Install" to begin. After installation, click on the "Restart" dialog button to restart the computer.

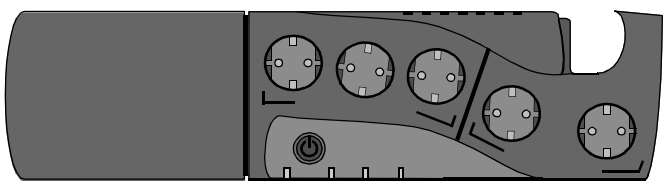
#### All Other Users

The software is designed for the Windows and Macintosh operating systems mentioned in this section. If one of these operating systems is not installed on the computer, the Back-UPS will still provide these primary features:

- Battery backup, surge protection, and telephone line protection to protect the entire desktop from lightning and power surges.
- Runtime needed to work through brief power disturbances. This allows time to manually save data and shut down safely.

The *disabled* features include Unattended Automatic Operating System Shutdown and Application Data Saving.

## Status Indicators and Alarms



ON LINE ON BATTERY REPLACE BATTERY OVERLOAD

**On Line (green)** - is lit whenever facility power is powering the Battery Backup outlets.

**On Battery (yellow)** - is lit whenever the battery of the Back-UPS is powering equipment connected to the Battery Back Up Outlets.

**Single Beep** - a short power loss has occurred and the Back-UPS briefly goes on battery.

**Four Beeps Every 30 Seconds** - this alarm is sounded whenever the Back-UPS is running On Battery. Consider saving work in progress.

**Continuous Beeping** - this alarm is sounded whenever a low battery condition is reached. Battery run-time is very low. Promptly save any work in progress and exit all open applications. Shutdown the operating system, computer and the Back-UPS.

**Replace Battery (red)** - is lit whenever the battery is near the end of its useful life, or if the battery is not connected (see above). A battery that is near the end of its useful life has insufficient run-time and should be replaced.

**Beeps for 1 Minute Every 5 Hours** - this alarm is sounded whenever the battery has failed the automatic diagnostic test.

**Overload (red)** - is lit whenever power demand has exceeded the capacity of the Back-UPS.

**Continuous Tone** - this alarm is sounded whenever the Battery Backup outlets are overloaded.

**Circuit Breaker** - the circuit breaker button located at the side of the Back-UPS will stick out if an overload condition forces the Back-UPS to disconnect itself from facility power. If the button sticks out, disconnect non-essential equipment. Reset the circuit breaker by pushing the button inward.

## Replace the Internal Battery

To replace the internal battery, proceed as follows:

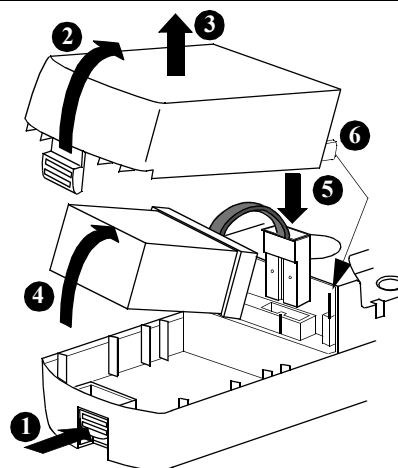
**Note:** Replacing the battery is a safe procedure. However, small sparks may occur during the process. This is normal.

### 1 2 3

Place the unit on a flat surface. Press the battery cover latch and remove the battery cover.

### 4

Pull the battery out of the housing, exposing the battery wire and connector. Pull up on the battery connector. Recycle the old battery.



### 5

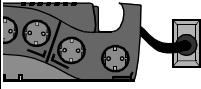

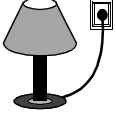
Connect the new battery to the battery connector. Place the battery into the housing.

### 6

Slide the tabs on the battery cover into the slots in the chassis. Push the battery cover downward until the battery cover latches to the housing.

## Troubleshooting

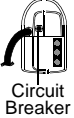
Use the tables below to solve minor Back-UPS installation and operation problems. Consult APC On-line Technical Support or call APC Technical Support for assistance with problems that cannot be resolved using this document:

| Possible Cause                                | Procedure                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                      |
|-----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| <b>Back-UPS will not switch on</b>            |                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                      |
| Back-UPS not connected to an AC power source. | Check that the Back-UPS power plug is securely connected to the wall outlet.                                                                                                                                                                                                                                                                                                                                  |                     |
| Back-UPS circuit breaker "tripped".           | Disconnect non-essential equipment from the Back-UPS. Reset the circuit breaker (located on the rear panel of the Back-UPS) by pushing the circuit breaker button fully inward until it catches. If the circuit breaker resets, switch the Back-UPS on and reconnect the equipment one-at-a-time. If the circuit breaker trips again, it is likely that one of the connected devices is causing the overload. | <br>Circuit Breaker |
| Very low or no facility voltage.              | Check the wall outlet that supplies power to the Back-UPS using a table lamp. If the lamp bulb is very dim, have the facility voltage checked by a qualified electrician.                                                                                                                                                                                                                                     |                     |

### Back-UPS does not power computer/monitor/external drive during an outage

|                                                                                      |                                                                                           |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| Internal battery is not connected.                                                   | Check the battery connections. (refer to <i>Replace the Internal Battery</i> ).           |
| Computer, monitor or external disk/CD-ROM drive is plugged into a Surge Only outlet. | Move computer, monitor, or external drive power cord plug to the Battery Back Up outlets. |

### Back-UPS operates on battery although normal facility voltage exists

|                                                                                               |                                                                                                                                                                                                  |                                                                                                        |
|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Back-UPS circuit breaker "tripped".                                                           | Disconnect non-essential equipment from the Back-UPS. Reset the circuit breaker (located on the rear panel of the Back-UPS) by pushing the circuit breaker button fully inward until it catches. | <br>Circuit Breaker |
| The wall outlet that the Back-UPS is connected to does not supply facility power to the unit. | Connect the Back-UPS to another wall outlet or have a qualified electrician check the building wiring.                                                                                           |                                                                                                        |

### Back-UPS does not provide expected backup time

|                                                                                 |                                                                                                                                                                                                                                                                                                    |
|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Back-UPS is excessively loaded.                                                 | Unplug non-essential Battery Backup connected equipment, such as printers and plug them into Surge Only outlets. Note: Devices that have motors or dimmer switches (laser printers, heaters, fans, lamps, and vacuum cleaners, for example) should not be connected to the Battery Backup outlets. |
| Back-UPS battery is weak due to recent outage and has not had time to recharge. | Charge the battery. The battery charges whenever the Back-UPS is connected to a wall outlet. Typically, eight hours of charging time are needed to fully charge the battery from total discharge. Back-UPS run-time is reduced until the battery is fully charged.                                 |
| Battery requires replacement.                                                   | Replace battery (see Order Replacement Battery). Batteries typically last 3-6 years, shorter if subjected to frequent power outages or elevated temperatures.                                                                                                                                      |

### Replace Battery indicator is lit

|                                    |                                                                                                                                                                          |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Battery is not connected properly. | Check the battery connections. Refer to <i>Replace the Internal Battery</i> .                                                                                            |
| Battery requires replacement.      | The battery should be replaced within two weeks (see "Order Replacement Battery"). Failure to replace the battery will result in reduced run-time during a power outage. |

### Overload indicator is lit or flashing

|                                                                               |                                                                                                                                     |
|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Battery Back Up outlets are drawing more power than the Back-UPS can provide. | Move one or more equipment power plugs to the Surge Only outlets. Turn the Back-UPS off and then on to reset the Overload indicator |
|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|

### Replace Battery indicator is flashing

|                   |                                                                    |
|-------------------|--------------------------------------------------------------------|
| Back-UPS failure. | Disconnect the Back-UPS from facility power. Call APC for service. |
|-------------------|--------------------------------------------------------------------|

## Specifications

|                                         |                                                                                                        |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------|
| Input Voltage (on line)                 | 196 - 264 Vac (default setting)                                                                        |
| Frequency Limits (on line)              | 47 - 63 Hz (autosensing)                                                                               |
| On Battery Waveshape                    | Stepped Sine Wave                                                                                      |
| Maximum Load                            | 350 VA - 225 W    500 VA - 325 W                                                                       |
| Typical Recharge Time                   | 4 Hours                                                                                                |
| Operating Temperature                   | 0° to 40°C (32° to 104°F)                                                                              |
| Storage Temperature                     | -5° to 45°C (23° to 113°F)                                                                             |
| Operating and Storage Relative Humidity | 0 to 95% non-condensing                                                                                |
| Size (H x W x D)                        | 8.1 x 11.1 x 45.3 cm (3.2 x 4.4 x 17.8 inches)                                                         |
| Weight                                  | 350 VA - 3.1kg (6.8 lb)    500 VA - 3.4 kg (7.5 lb)                                                    |
| Shipping Weight                         | 350 VA - 3.8 kg (8.3 lb)    500 VA - 4.1 kg (9.0 lb)                                                   |
| EMI Classification                      | EN 55022 Class B                                                                                       |
| On Battery Run-Time                     | 350 VA - 11 minutes, 500 VA - 20 Minutes<br>Desktop Computer and 15 inch (38.1 cm) monitor (110 watts) |

## Order Replacement Battery

The typical battery lifetime is 3-6 years (depending on the number of discharge cycles and operating temperature). A replacement battery can be ordered over the phone from APC, or the battery can be ordered on-line from the APC web site (see below, a valid credit card is required).

When ordering, please specify Battery Cartridge: 350 VA order **RBC29**, 500 VA order **RBC30**.

## Transfer Voltage Adjustment (optional)

In situations where the Back-UPS appears too sensitive to low facility input voltage, it may be necessary to adjust the transfer voltage. This is a simple task requiring use of the Power On/Off pushbutton. To adjust the lower transfer voltage (LTV), proceed as follows:

1. Plug the Back-UPS into the facility power source. The Back-UPS will be in a Standby Mode (no indicators lit).
2. Press the front panel pushbutton fully inward for 10 seconds. All indicators on the Back-UPS will flash to acknowledge going into Programming Mode.
3. The Back-UPS will then indicate its current Lower Transfer Voltage, as shown in the following table.

| Indicators Lit | Lower Transfer Voltage    | Use When                                                                                                     |
|----------------|---------------------------|--------------------------------------------------------------------------------------------------------------|
| 1              | 160 Vac                   | Use of 180 Vac setting does not correct the problem. Check that connected equipment will operate at 160 Vac. |
| 2              | 180 Vac                   | Back-UPS frequently goes On Battery due to low input voltage.                                                |
| 3              | 196 Vac (factory default) | Normal power conditions exist.                                                                               |

4. To select 160 volts as the LTV, press the pushbutton repeatedly until 1 indicator is flashing.
5. To select 180 volts as the LTV, press the pushbutton until 2 indicators are flashing.
6. To select 196 volts as the LTV, press the pushbutton until 3 indicators are flashing.
7. Once in Programming Mode, if the pushbutton is not pressed within 5 seconds, the Back-UPS will exit the Programming Mode, and all indicators will extinguish.

## Back-UPS Storage

Before storing, charge the Back-UPS for at least eight hours. Store the Back-UPS covered and upright in a cool, dry location. During storage, recharge the battery in accordance with the following table:

| Storage Temperature      | Recharge Frequency | Charging Duration |
|--------------------------|--------------------|-------------------|
| -5 to 30°C (23 to 86°F)  | Every 6 months     | 8 hours           |
| 30 to 45°C (86 to 113°F) | Every 3 months     | 8 hours           |

## Service

**Note:** If the UPS requires service, do not return it to the dealer. The following steps should be taken:

1. Consult the Troubleshooting section to eliminate common problems.
2. Determine if the circuit breaker is tripped. If the circuit breaker is tripped, reset the breaker and determine if the problem still exists.
3. If the problem persists, consult the APC Worldwide Web site ([www.apc.com](http://www.apc.com)) or call customer service.
  - Record the model number of the UPS, the serial number, and the date purchased. Be prepared to troubleshoot the problem over the telephone with a technician. If this is not successful, the technician will issue a Return Merchandise Authorization Number (RMA#) and a shipping address.
  - If the UPS is under warranty, repairs are free. If not, there is a repair charge.
4. Pack the UPS in its original packaging. If the original packing is not available, ask customer service about obtaining a new set. Pack the UPS properly to avoid damage in transit.

**Note:** Never use Styrofoam™ beads for packaging. Damage sustained in transit is not covered under warranty (insuring the package for full value is recommended).
5. Write the RMA# on the outside of the package.
6. Return the UPS by insured, prepaid carrier to the address provided by customer service.

## Wall Mount of UPS

The UPS can be mounted vertically or horizontally to a wall surface. Use the template below to position the mounting fasteners (not supplied). Wall mount the UPS as follows:

1. Hold this page against the wall in the desired mounting location.
2. Use thumbtacks or tape to hold this page in place against the wall. Use a sharp nail or pin to puncture the center of each template circle to mark the wall.
3. Install the mounting fasteners at the marked locations. Leave the head of both fasteners 8 mm (5/16") out from the face of the wall. The fasteners must be able to support 6.8 kg (15 lb).
4. Mount the UPS by positioning the key-hole slots over the mounting fastener heads. For vertical mounting, slide the UPS down into place. For horizontal mounting, turn it slightly counterclockwise until it is securely in place.



6.88 Inches  
(x.x cm)

